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ABSTRACT

Despite increased government investments in education, West Virginia continues to have one of the nation's highest high school dropout rates and is among the states with the highest unemployment rates. Human capital theory provides the conceptual basis for evaluating the relationship between investment in education and economic development. An ordinary least squares regression method was used to examine the implications of high school dropouts in the economic development of West Virginia. Results revealed that increases in high school dropout rates and the state gross domestic product increased employment rates, while an increase in unemployment compensation decreased employment rates. Thus, the increase in employment rates may likely be in unskilled and low-paying jobs. The conclusions suggest several implications for policymakers. The opportunity cost to invest in education is low when an area is still attracting firms that require unskilled and low-paying jobs. As long as dropout rates positively correlate with unskilled and low-paying jobs, the poverty cycle in West Virginia will perpetuate. The perpetuation of low income and poverty will result in increased government expenditures on transfer payments such as income support, while generating low tax revenue. The perpetuation of unskilled and low-paying jobs will force most educated community members to leave because of the inability to find suitable jobs, and the community will lose a significant portion of returns on its investment in these people's education. Recommendations are offered for state and local long-range strategies to stimulate students to stay in school and pursue further education. (Contains 44 references.) (TD)

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High School Dropouts: Implications in the Economic Development of West Virginia

By

Semoa C. B. De Sousa and **Tesfa Gebremedhin**

RESEARCH PAPER 9909

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ABSTRACT: An ordinary least squares (OLS) regression method was used to evaluate the relative importance of high school dropout rates and other economic factors that could explain the economic development in West Virginia, as represented by the employment rates. The empirical results revealed that an increase in the high school dropout rates and the State GDP increased the employment rates while the increase in unemployment compensation decreased employment rates. Thus, the increase in the employment rates may likely be on unskilled and low paying jobs.

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HIGH SCHOOL DROPOUTS: IMPLICATIONS IN THE ECONOMIC DEVELOPMENT OF WEST VIRGINIA

INTRODUCTION

West Virginia has traditionally lagged behind other states by virtually any measure of human capital development, and still contains a solid block of counties with low educational attainment (Gebremedhin, Odell, 1996). The state also faces constant economic decline consistent with those found in rural areas nationwide. Despite an increase in the government expenditure on human capital formation through investment in education, West Virginia continues to have one of the nation's highest and chronic high-school dropout rates, and is among the states with the highest unemployment rates. Students are dropping out of high school without any regard for future adverse economic effects. It is reasonable to assume that the chronic high school dropout rate is closely associated with the lack of job opportunities in the state and constitute a threat to future economic development of West Virginia.

Despite the increases in government expenditures on investment in education for human capital formation, one of the major social and economic problems confronting the state of West Virginia is the persistent high school dropout rate. According to the National Center for Educational Statistics (1995) the high school dropout rate in West Virginia was around 16 percent between 1993-94 compared to 11 percent at the national level in the same years. These relatively high high-school dropout figures might be a strong indicator of the future shortages in the number of students adequately prepared for entry into the labor force. This situation may create a mismatch between the types of jobs available and the skills and education of West Virginia's labor force.

Bickel et al., (1991) contend that nearly 40 percent of all students dropped-out before reaching 8th grade, and only 33 percent of the state's high school graduates enrolled in college or university. In 1994, though the high school graduate rate increased, the percentage of those graduates that enrolled in college or university decreased to 24 percent (Almanac of Higher Education, 1995). Comparing between high school dropouts and high school graduates, studies of the Bureau of Census (1990) indicates that high school dropouts consistently have higher unemployment rates than high school graduates. For example, in 1990 about 36 percent of the high school dropouts were unemployed as compared to 21 percent of high school graduates. According to Indiana Career and Post-secondary Advancement Center (ICPAC, 1998), in 1997 9.4 percent of high school dropouts were unemployed as compared to 5.4 percent of high school graduates and 1.7 percent of college graduates.

Other studies (U S Department of Education, 1996) have also shown that high school dropouts who succeeded in finding jobs earn less money compared to high school graduates. For example, the National Center for Educational Statistics (1997) indicates that in 1987 the high school dropouts earned $0.67 for every dollar a high school graduate earned; however, in 1995 the high school dropouts earned only $0.48 for every dollar earned by a high school graduate. To this effect, increased investment in education, as indicated in various studies, is associated with declines in the high school dropout rate and increases in workers' skills which result in a more productive labor force that is vital for rural development and economic growth.

The high rate of high school dropouts not participating in the labor force have no future perspective in terms of job opportunities, and may constitute a threat to the

economic development of West Virginia. There is a significant cost to society from a student who leaves school unprepared to enter the labor force. According to Catterall (1986), the cost to society amounts to $1.2 million over the individual's lifetime whereas his/her personal loss of income accounts only to $200,000. Since they earn less, high school dropouts generate fewer tax receipts and are more frequent recipients of welfare and unemployment payments (US Department of Education, 1996; WV Department of Education, 1986-87). Since the chronic high school dropout rate is indicative of serious problems for a large portion of young population in West Virginia, there is a need to examine the nature and extent of this problem and try to determine ways to solve it.

The overall objective of this paper is to determine empirically the implications of high school dropouts in the economic development of West Virginia. The specific objectives are to:

1 Establish the theoretical and empirical relationship between human capital formation and employment availability in West Virginia.

2 Determine empirically the implications of high school dropouts in the economic development of West Virginia.

3 Draw some relevant policy implications from the research findings.

LITERATURE REVIEW

The availability of low-cost unskilled labor in the state of West Virginia attracted many industries in the 1960s and 1970s. However, the global technological change that took place in the US economy in the 1980s followed by the growth of high-tech manufacturing and service industries in the 1990s increased the domestic demand for skilled, highly trained and educated workers (Reeder, 1990). Moreover, in recent years,

West Virginia is experiencing growth in health, managerial business, and service occupations (Fekete, 1995), which require educational attainment beyond high school. The increasing trend in high school dropout rate and the general decline of active population may leave West Virginia in shortage of qualified labor supply to meet the demand for high growth job opportunities. According to Pulver's (1986) general policy measures for encouraging economic development, West Virginia needs to attract outside investment, improve the efficiency and competitiveness of existing business, and encourage the creation of new business. These options, however, would be viable with the availability of adequate infrastructures and a highly skilled and educated labor force. Kraybill and Weber (1995) identified education and training of the labor force along with technological innovations to be the key to economic growth and development. Further empirical research evidence of the contribution of education in the human capital theory has consistently shown that human capital formation either through education or training was the main source of growth in income and subsequently the economy (Mincer, 1958; Houthakker, 1959; Schultz, 1961; Becker, 1962; Ericksson, 1991). Sander and Schaeffer (1988) found that educational attainment may enhance the economic attractiveness of a state and thus contribute to employment growth. According to Goetz (1993), a society with greater stocks of human capital formation may be in a better position to innovate technologically, thereby creating faster income growth. Educational attainment of workforce remains a key factor in influencing industrial location decisions as investors and corporations evaluate the economic attractiveness of a community by assessing the availability of skilled labor and other factors which affect their labor (Gebremedhin,

Odell, 1996). Therefore, the implications of high school dropout in the economic development of West Virginia will be approached through the human capital theory.

The stock of human capital is an important determinant of the level of development (Rasmussen, 1994). Human capital formation is dependent on economic development, the same way economic development affects the quality of schooling, public services and the overall quality of life (Gebremedhin and Odell, 1996).

Schultz (1961) and Becker (1962) first developed human capital theory to account for increases in productivity that could not be explained by improvements in technology and financial capital. Since then, numerous other studies (Stallann and Johnson, 1996; Broomhall and Johnson, 1994; Goetz, 1993; Smith et al., 1992; Sander and Schaeffer, 1988) have used human capital theory to show the relationship between income and investment in education, or between employment and investment in education. Human capital refers to those individual skills, talents, capacities and elements of knowledge that improve one's contribution to the production of goods and services (Gebremedhin and Odell, 1996). The foundation of the human capital theory lies in the fact that people make investment on themselves in terms of education with the expectation of future returns (Blaug, 1976). The link between education as a form of human capital development and economic development rests on the theory that human capital investment improves the quality of the labor force, and thereby, the value of the labor input to the production process of the local economy (Welch, 1975). Moreover, the higher the individual's educational attainment, the greater are his or her chances of being interested and actively involved in various political matters (Heernstein and Murray, 1994). Human capital theory is based on a model of individual choice. Likewise, the

economy is viewed as composed of families who make choices that shape their present consumption and future income (Gebremedhin and Odell, 1996). The decision at the core of human capital theory is whether to spend time and resources to obtain income in the present, and hence maximize current consumption, or instead to use one's time and resources in obtaining skills and thus maximize future consumption (Friedman, 1984). If we place the individual choice on the state economy, then the human capital theory would be the choice of the state to invest in human capital, like investing in tangible forms of capital, such as buildings and industrial equipment which generates a stream of future goods.

According to Watchel (1984), an individual will invest in human capital through education as long as the expected stream of returns from the investment exceeds the cost incurred by making the investment. The prospects of having better job opportunities and of achieving improved lifetime earnings are major incentives for people to stay in school and invest more in education. Education contributes significantly to employment success, and those with education are both more likely to be employed and earn a higher income. According to Findeis et al. (1996) education is considered important for prospective employment now, more than ever before. Education provides an individual with social, academic, technological and economic foundations that enhance productivity and earnings (Weiss, 1995; Gebremedhin and Odell, 1996). On the other hand, failure to complete high school and pursue higher educational goals results in lower annual and lifetime earnings, (National Center for Education Statistics, 1982), higher unemployment rates for dropouts (Feldstein and Ellwood, 1982), lower self-esteem and restricted life opportunities (Smith et al., 1992). Kutscher and Personic (1986) argued in their studies,

that payoffs for investing in high school education have been so diminished that a high school diploma is of little value except as a means of gaining access to a college or university. However, a study done by Postal, Lass and Markley (1991) indicated that individuals with greater stocks of human capital, that is, previous educational attainment, had higher probabilities of success. Individuals with a high school diploma or GED have higher probabilities of success and significantly contribute to lower unemployment rates than high school dropouts or those who are still in school. A high school education serves as a critical start point for facilitating active engagement in civic activities (Beaulieu and Israel, 1997). According to Olneck and Kim (1989), as high school graduation becomes increasingly universal, the typification of the high school dropouts as unqualified and irresponsible becomes stronger.

METHODOLOGY

Human capital theory provides the conceptual basis for evaluating the relationship between investment in education and economic development. Attention is given to the conceptual framework for linking educational attainment with greater labor productivity. Educational attainment expressed in the form of greater stock and flow of human capital is also hypothesized to impact local economic development in the form of changes in employment levels.

To accomplish the stated objectives of the study an econometric model was developed. An ordinary least squares (OLS) regression method was applied to determine the implications of high school dropouts in the economic development of West Virginia. Economic development represented by employment rate will be regressed against

independent variables: high school dropout rates, real Gross State Product per capita and real unemployment compensation per capita.

Model Specification

The percent of employment (Emp.) is represented as a function of stock of human capital investment based on educational attainment, State gross product per capita (SGP) and unemployment compensation per capita.

$$Emp = B_o - B_1 HDrop + B_2 GSP - B_3 Unp.comp.$$

where,

Emp. = percent employment (in terms of people employed).

HDrop = percent of high school dropouts.

GSP = gross state product per capita (expressed in real 1982 dollars).

Unp.comp. = unemployment compensation per capita (expressed in real 1982 dollars).

B_o = the intercept, representing the benchmark class of people with no education whatsoever.

Data on employment rate were obtained from the West Virginia Bureau of Employment Programs, Labor and Economic research Programs. Data on high school dropout rates were obtained from West Virginia Department of Education in Charleston and Digest of Education Statistics, and the state gross product was obtained from the Bureau of Economic Analysis.

EMPIRICAL RESULTS AND ANALYSIS

The regression results for the model are reported in Table-1. While the model explains 84% of the variation of the dependent variable, the coefficient sign for high

school dropout is the opposite of what was expected. The results show that an increase in the percentage of high school dropout rate will result in an increase of 0.55 in the employment rate. This implies that high school dropout rates have no negative effect on employment rate. This result however, can be explained by the following:

1. West Virginia has a number of counties considered rural, which may have lower returns to education than urban areas, thus lowering the incentive of youths to continue in school;
2. The availability of unskilled and low paying jobs in services will increase the employment rate, by enabling the high school dropouts to be employed, while their standard of living may not improve. Larson and White (1986) found that even counties with rapid job growth did not experience decreases in poverty. The increase in employment rate as high school dropout rate increases in a way supports Schultz's (1961) human capital theory and Stallmann's, et. al. (1993) hypothesis that labor market demand creates incentives for human capital investment, particularly in education. If the labor market demand for unskilled jobs is higher than skilled jobs, the students have no incentive to stay or invest in school. Moreover, this may also explain the fact that despite the government increased expenditures on human capital formation, West Virginia continues having highest high school dropout rates in the nation.

The gross state product per capita has the sign expected. Higher real Gross State Product per capita will increase the percentage of employment. This is consistent with the theory of economic growth; the signs of a growing economy are likely to be manifested by the increase in employment rate and job opportunities. Moreover, if the

state is doing well economically even the existing business in the community may have the incentives to invest some more in their business or in new business, thus resulting in more employment opportunities and higher employment rate.

An increase in real unemployment compensation per capita will decrease the employment rate by 0.045. This implies that more unskilled people may be willing to be unemployed if their unemployment compensation is high enough to get them by in life.

Table1. Regression results for high school dropouts on percent employment in West Virginia (N=20)

Variable	Mean	Coefficient	t-Statistic
Dependent : Emp. Rate	***89.7***	-	-
Independent:			
Intercept	-	77.6257***	20.9
%High school dropout	19.3	0.5449***	3.98
Gross state product/cap.	16337.4	0.0004***	7.03
Unemployment Compensation/cap.	111.4	-0.0454***	-6.775
Adjusted R-squared		0.837	
F-probability		0.000	

Note: ***Statistically significant at 0.01 or less
**Statistically significant at .05
*Statistically significant at 0.10

CONCLUDING REMARKS

It seems that the long obvious notion that education is the important ingredient in national economic growth is not necessarily applicable to local economic growth (Killian and Parker, 1991; MacGranahan and Ghelfi, 1991). Schultz's human capital theory suggested that demand for labor creates incentives for human capital investment, however this study shows that the direction of the causation is not always in a positive sense. Instead of incentive to invest more in education, there may be an incentive to drop out from high school and get the available jobs.

It is true that employment rate is affected by other factors, the same way there are many other factors that affect the high school dropout rate; nevertheless these two variables can make a cycle, which could become vicious and difficult to break. Studies done by Stallmann, Johnson, Mwachofi and Flora (1993) revealed that an increase in the percentage of employment in managerial occupations reduced the local dropout rate and substantially increased the percentage of high school students who continued their education as expected. On the other hand the percentage increase of employment in service occupations increased the dropout rates. In this paper, consistent with previous studies, the increase in high school dropouts is associated with an increase in the employment rate, which most likely are of unskilled and low paying jobs. Even though the increase in high school dropout rate does not decrease the employment rate, there are still implications for economic development of West Virginia. Probably there are not many firms that employ highly skilled labor in the area, as those firms are often interested in improving local education opportunities (Smith and DeYong, 1992). The area is still attracting firms that require unskilled and low paying jobs; thus the opportunity cost to

invest in education is low. Moreover, as the dropout rate positively correlates with the unskilled and low paying jobs, the poverty cycle will perpetuate in the state and the local communities. The perpetuation of low income and poverty will result in government increased expenditure on transfer payments such as income support, while these individuals will generate low tax revenue. By the same token, the perpetuation of unskilled and low paying jobs will force most of the educated members of the community to leave because they are unable to find suitable jobs. The community will lose a significant portion of returns on its investment on these people's education. Moreover, local economic development may be constrained as the educated people more likely would take on the community leadership roles (Debertin et al, 1991).

In conclusion, as difficult as it may be to break the cycle, the State and local communities must pursue a variety of long-range strategies to stimulate students to stay in school and pursue further education. It is evident that skilled production employees and managers and professionals have higher marketability for better employment opportunities. For example, the state and local communities need to:

- Identify high-risk drop out students and monitor them closely.
- Incorporate extracurricular activities such as sports and arts into the school curricula to stimulate students to stay in school for additional vocational training opportunities.
- Provide community and schools with good social interaction, which would help students to build up a greater sense of social integration and smaller likelihood of dropping out. Wagenaar (1987) indicates that dropouts are characterized by normlessness and social isolation.

- Create foundations that would provide students with support to attend and finish high school and pursue technical training and guarantee them a job in the community upon graduation[1].

A rural community can not prosper economically if the bulk of employment opportunities are based on unskilled and low paying jobs, the same as if the bulk of the labor forces are made of unskilled and uneducated employees.

[1] This strategy was implemented in a small community in Virginia with fruitful results (Stallmann, Johnson, Mwachofi and Flora, 1993).

REFERENCES

Beaulieu, Lionel J. and Glenn D. Israel. Strengthening Social Capital: The Challenge for Rural Community. The forthcoming chapter in Rural Sustainable Development in America (Ivonne Audirac, ed.) John Wiley & Sons Publisher, 1997.

Becker, G. S. "Investing in Human Capital: A Theoretical Analysis." *Journal of Polit. Econ.*, 70 (1962):9-49.

Bickel, R. N., Banks, S. R., and Spating L. " Bridging the Gap between High School and College in Appalachia State a Near-Replication of the Florida Research." *Journal of Research in Rural Education*, 7:2 (1991): 75-87.

Blaug, M. "Empirical Status on Human Capital Theory: A Slightly Jaundiced Survey." *Journal of Econ. Literature*, (1976): 827-855.

Broomhall, D. E. and Johnson, T. G. "Economic Factors that Influence Educational Performance in Rural Schools". *American Journal of Agricultural Economics*, 76 (Aug. 1994): 557-567.

Bureau of Census, (1990). *Statistical Abstract of US*, 1990.

Catterall, J. S. "Dropping-out: The cost to Society." *Education*, Spring, 1986.

Debertin, D.L., C.L. Infanger, and S.J. Goetz. "The Viability of Rural Communities: Challenges for the 1990s and Beyond." *Proc. Rural Planning and Development: Visions of the 21st Century*, Vol.1, Orlando, FL. (1991):289-98. In Goetz, Stephan J. "Human Capital and Rural Labor Issues". *American Journal of Agricultural Economics*, 75 (Dec. 1993): 1164-1168.

Fekete, D. "An Analysis of the Impact of Investment in Education on Rural Economic Development in West Virginia." Unpublished M.S. Thesis. West Virginia University, Morgantown, 1995.

Feldstein, M. and Ellwood, D. T. Teenage unemployment: What is the problem? In R.B. Freeman & D. A. Wise (Eds), The youth labor market problem: Its nature, causes and consequences (pp. 17-33). Chicago: University of Chicago Press, 1982.

Findeis, Jill L., Leif Jesen and Wan-Ling, H. "Education and Employment: Getting Better Jobs." *Choices* (The Magazine of Food, Farm and Resources Issues). Fourth Quarter 1996.

Friedman, S.R. "Structure, Process, and the Labor Market". In W. Darity, Jr. (Ed). *Labor Economics: Modern Views*. Kluwer-Nijhoff Publishing, 1984.

Gebremedhin, T. G. and Odell, K. S. Human Capital Formation, Employment Opportunities, Labor Mobility, and Economic Development in West Virginia. A Hatch Research Report. West Virginia University, Morgantown, 1996.

Goetz, Stephan J. "Human Capital and Rural Labor Issues". *American Journal of Agricultural Economics*, 75 (Dec. 1993): 1164-1168.

Herrnstein, Richard J. and Charles Murray. The Bell Curve: Intelligence and Class Structure in American Life. New York: The Free Press, 1994.

Houthkker, H. S. "Education and Income." *Review of Economics and Statistics*, 41:1: (1959).

Indiana Career and Post-secondary Advancement Center (ICPAC). "The Dollars of Education". *ICPAC Information Series*, IS-45 (1998):3-6.

Killian, Molly S. and Timothy Parker, "Higher Education No Panacea for Weak Peak Rural Economies." Rural Development Perspectives, 7(1991): 2-7.

Kraybill, D. S. and Weber, B. A. "Institutional Change and Economic Development in Rural America." *American Journal of Agricultural Economics*, 77:5 (Dec. 1995): 1264-70.

Kutscher, R. E. and V. Personick. "Deindustrialization and Shift to Services." *Monthly Labor Review*. 109:3-13: (1986).

Larson, Donald K. and Claudia K. White. "Will Employment Growth Benefit All Households? A Case Study in Nine Kentucky Counties." Rural Development Research Report 55, Washington, DC: Economic Research Service, U.S. Department of Agriculture, January, 1986.

MacGranahan, D. A. and Ghelfi, L.M. "The Education Crisis and Rural Stagnation in the 1980's." *In Education and Rural Development: Strategies for the 1990's*, pp. 40-92. ERS Staff Report No. AGES 9153. Agriculture and Rural Economy Division, Economic Research Service, U.S. Department of Agriculture. 1991.

Mincer, Jacob. "Investment in Human Capital and Personal Income Distribution". *Journal of Political Economy*, 66:5 (1958):281-302.

National Center for Educational Statistics. Digest of Educational Statistics, 1982. Washington D.C.: Government Printing Office.

Olneck, Michael R. and Ki-Seok Kim. "High School Completion and Men's Incomes: An Apparent Anomaly." *Sociology of Education*, 62:3 (Jul. 1989): 193-207.

Postal, Marjorie L., Daniel A. Lass, and Deborah M. Markley. "Factors Affecting Successful Participation in Massachusetts Job Training Programs." Department of Agricultural Resource Economics, University of Massachusetts, Extension Staff Paper Series No. 11, November 1991.

Pulver, G. C. *Community Economic Development Strategies*. Cooperative Extension Service Publication. G-3366, University of Wisconsin, Madison, 1986.

Rasmussen, David W. "Spatial Economic Development, Education, and the New Poverty." *International Regional Sciences Review*, 16:1&2: (1994):107-117.

Reeder, R. J. Targeting Aid to Distressed Rural Areas (Indicators of Fiscal and Community Well-being). Staff Report No. AGES 9067, USDA/ERS/ARED, Washington, D.C. 1990.

Sander, W. and Schaeffer, P. V. "Schooling, Taxes, and State Employment Changes". *Illinois Business Review*, 2(April 1988): 2-4.

Schultz, T. W. "Investment in Human Capital." *American Econ.. Review*, 60 (1961): 1-15.

Smith, E.D. and DeYong, A.J. "Exploring Studies of Occupational Structure of the Workforce and Support of Public Education in Rural Appalachia." SDRC No. 160. Mississippi State: Southern Rural Development Center. 1992.

Smith, M. H., Beaulieu, L. J. and Israel G. D. "Effects of Human Capital and Social Capital on Dropping out of High School in the South" *Journal of Research in Rural Education*, 1(Winter, 1992): 75-87.

Stallmann, J. I., Johnson, T. G. "Community Factors in Secondary Educational Achievement in Appalachia". *Youth and Society*, 27 (June, 1996): 469-484.

Stallmann, J. I., Johnson, T. G., Mwachofi, A. and Flora, J. L. "Labor Market Incentives to Stay in School." *Journal of Agr. And Applied Econ.*, 25 (Dec.1993): 83-94.

The Almanac of Higher Education .1995. The United States.

US Department of Education. National Center for Educational Statistics 1995. *Digest of Education Statistics*. Washington D.C.

US Department of Education. National Center for Educational Statistics 1997. Office of Educational Research Improvement (OFRI). Washington D.C.

US Department of Education. The Condition of Education 1996. Washington D.C.: National Center for Education Statistics.

Wachtel, H.M. Labor and the Economy. New York: Academic Press, 1984.

Wagennar, T.C. "What do we know about dropping out of high school?" *Research in the Sociology of Education and Socialization*, 7(1987):161-190.

Weiss, Andrew. "Human Capital vs. Signalling Explanations of Wages." *Journal of Economic Perspectives*, 9:4: (1995), 133-154.

Welch, Finis. "Human Capital Theory: Education, Discrimination, and Life Cycles." *American Economic Review*, 65: (1975):53-73.

West Virginia Department of Education. *West Virginia Dropout Study 1984-90*. Charleston, West Virginia, 1986-87.